NRC FORM 618 (8-2000) 10 CFR 71			U.S. NUCLEAR REGULATORY COMMISSION		
CERTIFICATE OF COMPLIANCE FOR RADIOACTIVE MATERIAL PACKAGES					
1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9248	18	71-9248	USA/9248/AF	1 OF	6

2. PREAMBLE

a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. ISSUED TO *(Name and Address)*

Framatome ANP, Inc.
2101 Horn Rapids Road
Richland, WA 99352-0130

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Framatome ANP, Inc. application
dated September 5, 2003, as supplemented.

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model Nos.: SP-1, SP-2, and SP-3

(2) Description

Fuel assembly and fuel rod shipping containers. The packages consist of a right rectangular metal inner container and a wooden outer container, with cushioning material between the inner and outer containers.

The metal inner container is approximately 11-1/2 inches by 18 inches by 179-1/2 inches long and is positioned within a wooden outer container approximately 30 inches by 31 inches by 207 inches long. The SP-1 and SP-2 packagings differ in the length of the metal inner container and end piece. The SP-3 packagings have a reduced spacing between the fuel assembly channels and the outer surface of the metal inner container. Cushioning is provided between the inner and outer containers by phenolic impregnated honeycomb and ethafoam, or equivalent. Closure of the metal inner container and the wooden outer container is accomplished by bolts. A pressure relief (breather) valve is provided on the inner container, and is set for 0.5 psi differential. The maximum weight of the packaging and contents is 2,800 pounds.

(3) Drawings

The packagings are fabricated and assembled in accordance with the following Framatome ANP, Inc., and Siemens Nuclear Power Corporation/Advanced Nuclear Fuels Corporation Drawing Nos.:

EMF-304,416, Rev. 14.
EMF-306,272, Rev. 10.
EMF-309,141, Rev. 1.

5.(a) (4) Product Containers

(i) Five-inch, Schedule 40, stainless steel pipe fitted with screw type or flange closure. The product container shall be vented if it contains materials which decompose at less than 1475 °F.

(ii) Rod shipping container as shown on Siemens Power Corporation Drawing No. EMF-309,141, Rev. 1.

(b) Contents

(1) Type and form of material

(i) UO_2 fuel assemblies in a 7 x 7, an 8 x 8, or a 9 x 9 square array with a maximum fuel cross-section area of 25 square inches, maximum fuel length of 174 inches and maximum average enrichment of 3.3 w/o U-235. Minimum zircaloy clad thickness is 0.025 inches; maximum pellet diameter is 0.555 inches. Any number of water rods in any arrangement is permitted.

(ii) UO_2 fuel assemblies in a 7 x 7, an 8 x 8, or a 9 x 9 square array with a maximum fuel length of 174 inches, and a maximum average enrichment between 3.3 to 4.0 w/o U-235. The maximum pellet diameter is 0.555 inch, and the minimum clad thickness is 0.025 inch. Any number of water rods in any arrangement is permitted, including part length rods. Each assembly contains at least 4 rods with nominal 2 weight percent Gd_2O_3, which are in non-perimeter locations and are symmetric about the diagonal.

(iii) UO_2 fuel assemblies with a maximum U-235 enrichment of 5.0 percent by weight, and a maximum average U-235 enrichment of 4.0 percent by weight. Each fuel assembly is made up of fuel rods in a 10 x 10 square array, with a maximum fuel cross section of 5.022 inches square, a nominal pitch of 0.511 inch, and a maximum fuel length of 174 inches. The maximum pellet diameter is 0.3356 inch, the minimum clad thickness is 0.0225 inch, and the maximum U-235 enrichment in any edge rod is 4.0 percent by weight. Each assembly contains at least 6 rods with nominal 2 weight percent Gd_20_3, which are symmetric about the diagonal, and each assembly contains at least 4 water rods in the 4 central rod positions.

(iv) UO_2 fuel rods with a maximum U-235 enrichment of 5.0 percent by weight, and a minimum Gd_2O_3 content of 1.0 percent by weight. The rods may be clad with zircaloy, steel or aluminum. The rods have a maximum fuel pellet diameter of 0.5 inch, and a maximum fuel length of 169 inches.

5.(b) (1) Type and form of material (Continued)

(v) UO_2 fuel assemblies composed of fuel rods in a 10 x 10 square array, with a maximum fuel cross section of 5.0 inches square, and a maximum fuel length of 174 inches. The maximum U-235 enrichment is 5.0 weight percent, the maximum U-235 enrichment for all edge rods is 4.0 weight percent, and the maximum average enrichment, excluding perimeter rods and rods containing gadolinia (Gd_2O_3), is 4.0 weight percent U-235. The maximum pellet diameter is 0.35 inch, and the minimum clad thickness is 0.018 inch. Each assembly must have a water channel in the central 3 x 3 rod positions. Any number of additional water rods in any arrangement is permitted, including part length rods. Each assembly must include at least twelve rods with a minimum nominal content of 2.0 weight percent gadolinia (Gd_2O_3), in a pattern symmetric about one of the assembly diagonals. At least eight of the twelve gadolinia rods must be located in rows 2 and 9, and in columns 2 and 9 of the assembly.

(vi) UO_2 fuel assemblies composed of fuel rods in a 10 x 10 square array, with a maximum fuel cross section of 5.0 inches square, and a maximum fuel length of 174 inches. The maximum U-235 enrichment is 5.0 weight percent. The maximum pellet diameter is 0.35 inch, and the minimum clad thickness is 0.018 inch. Each assembly must have a water channel in the central 3 x 3 rod positions. Any number of additional water rods in any arrangement is permitted, including part length rods. Each assembly must include at least eight rods with a minimum nominal gadolinia (Gd_2O_3) content of 2.0 weight percent in all axial regions with enriched pellets. Additional gadolinia rod specifications are included in supplement dated April 30, 1996.

(vii) UO_2 fuel assemblies composed of fuel rods in a 9 x 9 square array, with a maximum fuel cross section of 5.0 inches square, and a maximum fuel length of 174 inches. The maximum U-235 enrichment is 5.0 weight percent. The maximum pellet diameter is 0.40 inch, and the minimum clad thickness is 0.015 inch. Each assembly must have a water channel in the central 3 x 3 rod positions. Any number of additional water rods in any arrangement is permitted, including part length rods. Each assembly must include at least eight rods with a minimum nominal gadolinia (Gd_2O_3) content of 2.0 weight percent in all axial regions with enriched pellets. Additional gadolinia rod specifications are included in supplement dated April 30, 1996.

(viii) UO_2 fuel assemblies composed of fuel rods in a 9 x 9 square array, with a maximum fuel cross-section of 25 square inches, a maximum fuel length of 174 inches, and a maximum average uranium enrichment of 4.0 weight percent U-235. The nominal pellet diameter is 0.370 inch. At least the center 3 x 3 rod locations must be a water channel. Each assembly must include at least eight rods with a minimum nominal gadolinia (Gd_2O_3) content of 2.0 weight percent in all axial regions with enriched pellets. The eight gadolinia rod locations are shown in Figure 1 of the supplement dated July 27, 1999.

5.(b) (1) Type and form of material (Continued)

(ix) UO_2 fuel assemblies composed of fuel rods in a 10 x 10 square array, with a maximum fuel cross section of 5.0 inches square, and a maximum fuel length of 174 inches. The maximum U-235 enrichment is 5.0 weight percent, the maximum U-235 enrichment for all edge rods is 4.75 weight percent, the maximum U-235 enrichment for the four (4) corner edge rods is 3.05 weight percent, and the maximum U-235 enrichment for the eight (8) edge rods immediately adjacent to the four corner edge rods is 3.55 weight percent. The pellet diameter is between 0.30 and 0.3957 inch. Each assembly must have a water channel in a central 3 x 3 position. Any number of additional water rods in any arrangement is permitted, including part length rods. Each assembly must include at least ten rods with a minimum nominal content of 2.0 weight percent gadolinia (Gd_2O_3) in all axial regions with the enriched pellets, and in a pattern symmetric about one of the assembly diagonals. At least ten gadolinia rods must be located in rows 2 and 9, and in columns 2 and 9 of the assembly and cannot be immediately adjacent to another one of the ten gadolinia rods; however, diagonally adjacent is permitted. An additional upper tie plate (UTP) shipping shim may be added between the UTP and the fueled region. This UTP shim may consist of a maximum of 345 g plastic or plastic composite.

(x) UO_2 fuel assemblies composed of fuel rods in a 10 x 10 square array, with a maximum fuel cross section of 5.0 inches square and a maximum fuel length of 174 inches. The maximum uranium enrichment is 2.3 weight percent U-235. The pellet diameter is between 0.30 and 0.3957 inch. Each assembly must have a water channel in a central 3 x 3 position. Any number of additional water rods in any arrangement is permitted, including part length rods. An additional upper tie plate (UTP) shipping shim may be added between the UTP and the fueled region. This UTP shim may consist of a maximum of 345 grams plastic or plastic composite.

(2) Maximum quantity of material per package

Total weight of contents (fuel assemblies, or fuel rods and rod shipping containers) not to exceed 1265 pounds. Total quantity of radioactive material within a package may not exceed a Type A quantity.

(i) For the contents described in 5(b)(1)(i), 5(b)(1)(ii), 5(b)(1)(iii), 5(b)(1)(v), 5(b)(1)(vi), 5(b)(1)(vii), 5(b)(1)(viii), 5(b)(1)(ix), and 5(b)(1)(x):

Two full length fuel assemblies. Two short fuel assemblies may be substituted for each full length fuel assembly provided the two short assemblies are shipped end-to-end and the total fuel length does not exceed 174 inches.

(ii) For the contents described in 5(b)(1)(iv):

Two product containers specified in 5.(a)(4). Each product container may contain any number of loose fuel rods.

5.(c) Transport Index for Criticality Control (Criticality Safety Index)

Minimum transport index to be shown on label for nuclear criticality control:

(1) For contents described in 5(b)(1)(i), 5(b)(1)(ii), 5(b)(1)(iii), 5(b)(1)(iv), and 5(b)(1)(viii), and limited in 5(b)(2)(i) and 5(b)(2)(ii): 0.4

(2) For contents described in 5(b)(1)(v), 5(b)(1)(vi), 5(b)(1)(vii), 5(b)(1)(ix), 5(b)(1)(x), and limited in 5(b)(2)(i): 1.0

6. Each fuel assembly must be unsheathed or must be enclosed in an unsealed, polyethylene sheath which may not extend beyond the ends of the fuel assembly. The ends of the sheath may not be folded or taped in any manner that would prevent the flow of liquids into or out of the sheathed fuel assembly.

7. Polyethylene shipping shims may be inserted between rods within fuel assemblies as follows:

(a) For contents described in 5(b)(1)(i) and 5(b)(1)(ii), up to a maximum of 0.20 gram H_2O hydrogen equivalent per cubic centimeter averaged over the assembly.

(b) For contents described in 5(b)(1)(v), up to a maximum of 0.25 gram H_2O hydrogen equivalent per cubic centimeter averaged over the assembly.

(c) For contents described in 5(b)(1)(viii), up to a maximum volume fraction of 0.13 averaged over the void volume of the assembly.

(d) For contents described in 5(b)(1)(iii), 5(b)(1)(vi), and 5(b)(1)(vii), polyethylene shipping shims are not permitted.

(e) For contents described in 5(b)(1)(ix) and 5(b)(1)(x), up to a maximum volume fraction of 0.14 averaged over the void volume of the assembly.

8. Only contents described in 5(b)(1)(viii) and 5(b)(1)(ix) are authorized for transport in Model No. SP-3 packages.

9. Maximum average enrichment means the highest average enrichment through any cross sectional plane of the assembly.

10. In addition to the requirements of Subpart G of 10 CFR Part 71:

    (a) The package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of the application dated September 5, 2003.

    (b) Each packaging must be acceptance tested and maintained in accordance with the Acceptance Tests and Maintenance Program in Chapter 8 of the application dated September 5, 2003.

11. The package authorized by this certificate is hereby authorized for use under the general license provisions of 10 CFR §71.12.

12. Expiration date: February 28, 2009.

REFERENCES

Framatome ANP, Inc., application dated September 5, 2003.

Supplements dated: September 24 and November 6, 2003.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

John D. Monninger, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Date December 19 2003

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION REPORT

Docket No. 71-9248
Model Nos. SP-1, SP-2, and SP-3 Packages
Certificate of Compliance No. 9248
Revision No. 18

SUMMARY

By application dated September 5, 2003, as supplemented by letter dated September 24, 2003, and two letters dated November 6, 2003, Framatome ANP Inc., (Framatome or the applicant) requested renew of Certificate of Compliance (CoC) No. 9248, for Model Nos. SP-1, SP-2, and SP-3 packages for a term of five years. In addition the applicant requested that CoC No. 9248 be revised to: (1) consolidate the inner shipping container assembly drawing for each of the three separate models into one drawing; (2) revise the outer packaging drawing to allow counterboring the top lid bolt holes; and (3) include a new fuel category in CoC No. 9248. Framatome, to support its request, submitted a consolidated application for the package.

Framatome made its request for renewal in a timely manner. The certificate has been renewed for a five year term. In addition, based on the statements and representations in the application, the U.S. Nuclear Regulatory Commission (NRC or the staff) agrees that the other changes do not affect the ability of the packages to meet the requirements of Title 10 of the Code of Federal Regulations (10 CFR) Part 71.

EVALUATION

By application dated September 5, 2003, as supplemented, the applicant requested renewal of CoC No. 9248, for Model Nos. SP-1, SP-2, and SP-3 packages (USA/9248/AF). In addition, the applicant requested that CoC No. 9248 be revised to: (1) consolidate the inner shipping container assembly drawing for each of the three separate models into one drawing; (2) revise the outer packaging drawing to allow counterboring the top lid bolt holes; and (3) include a new lower enrichment fuel with no gadolinium in CoC No. 9248 for a fuel category previously authorized for the term of one year.

The applicant, in support of its request for certificate renewal, provided a consolidated application as specified in 10 CFR 71.38(c). The staff reviewed the consolidated application and concluded that the application incorporated the changes to the Safety Analysis Report that were previously referenced in CoC No.9248.

Consolidate the Drawings

The applicant submitted a revised drawing (EMF-304,416, revision 14 (SP-1, SP-2, and SP-3)) which consolidated information from three inner packaging drawings (EMF-304,416, revision 13 (SP-1), EMF-308,257, revision 5 (SP-2), EMF-309,818, revision 0 (SP-3)) into a single drawing. The staff has reviewed the consolidated drawing and

found that the designed dimensions of the packages were correctly incorporated, without change, into the revised drawing. Further, the staff found that no package design changes were made for any of the three packages. The staff has concluded that the performance of these packages were not affected by the drawing consolidation because the design of these packages were not changed. Thus, the staff has concluded that this action will not affect the safety of these packages.

Counterboring Top Lid Bolt Holes

The applicant requested approval to allow counterboring of the top lid bolt holes of the outer wooden container portion of the package. The applicant stated that counterboring the top lid bolt holes would allow the top of the lid bolts to be below the surface of the lid so that the bolts would not contact the feet of another outer container when stacked. Further the applicant stated that this change would not affect the safety of the package. The staff evaluated the impact of counterboring the lid bolt holes. The staff reviewed the applicant's acceptance tests and the maintenance program and found reasonable assurance that any significant damage to the wood box caused by the counterbored holes would be identified and corrected prior to loading of the package. Therefore, the staff has reasonable assurance that counterboring the lid bolt holes will not affect the safety of these packages.

Addition of a New Fuel Category

By application dated October 23, 2002, Framatome requested an amendment to CoC No. 9248 to temporarily authorize shipment of low enriched fuel with no gadolinium content in the packages. The request was made to support a reactor refueling. The fuel to be transported was replacement fuel for fuel that became defective midway through its life cycle. Thus, the replacement fuel had a lower enrichment and no gadolinium poison for core physics reasons. The NRC, based on the information submitted supporting this request, authorized shipment of these packages for a period of one year by amending CoC No. 9248 by letter (R. S. Freeman (Framatome) from J. D. Monninger (NRC) dated December 24, 2002). The applicant has requested that the lower enrichment fuel with no gadolinium authorized by the December 24, 2002, letter be incorporated into CoC No. 9248. To support its request the applicant incorporated the information provided in its letter dated October 23, 2002, into its consolidated application. The staff has determined that the findings previously made in its Safety Evaluation Report dated December 24, 2002, are still valid. Therefore, the staff has reasonable assurance that incorporation of this lower enriched non-gadolinium fuel into CoC No. 9248 will not affect the safety of these packages.

CONCLUSION

CoC No. 9248 has been renewed for a five year term that expires on February 28, 2009. In addition CoC No. 9248 has been revised to incorporate for the following: (1) a consolidate drawing for the inner shipping container assembly for the three separate models; (2) a revised outer packaging drawing allowing counterboring the top lid bolt holes; and (3) inclusion of a low enriched fuel with no gadolinium category in the CoC. Based on the statements and

representations in the application, the staff agrees that these changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9248, Revision No. 18 on December 19, 2003.